



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter

Governor

Dee C. Hansen

Executive Director

Dianne R. Nielson, Ph.D.

Division Director

355 West North Temple

3 Triad Center, Suite 350

Salt Lake City, Utah 84180-1203

801-538-5340

DOGM
MINERALS PROGRAM
FILE COPY

May 24, 1989

Mr. Brent Willoughby
Unit Manager
Hecla Mining Company
Escalante Unit
P.O. Box 310
Enterprise, Utah 84725

Dear Mr. Willoughby:

Re: Sampling Program for the Hecla Tailings Pond, M/021/004, Iron County, Utah

This letter is in response to Hecla's letter, written by Ms. Tanara Harlin on April 27, 1989, regarding your proposed tailings pond sampling program. Also, I spoke with Ms. Harlin on May 20, 1989 concerning the sampling program, and would like to verify some of the agreements made during that conversation.

I asked that samples be tested for the parameters discussed in Hecla's April 27, 1989 letter, except that the EP toxicity analysis be removed and replaced by a total metals analysis (please see attached list). The total metals should be analyzed using the ICAP Metals Screen procedure or HYD procedure. Be sure to specify that the selenium evaluation be for extractable selenium.

I also asked that, along with the tailing pond material, the waste and the topsoil material be analyzed. One composite sample for the waste material and one for the topsoil material should suffice. The analyses we would require would be the same, excluding total cyanide and total metals.

The pond material sampling procedure should consist of the following: 1) find a representative dry section of the pond. It should be fairly large, 15-25 acres; 2) divide this section into equal sized grids, 3) randomly select 3 grids; 4) collect a composite sample from each of the 3 grids, samples should include material down to four feet from the surface; 5) analyze the material for the parameters discussed above.

If a great deal of variability results from sample analyses, more samples will have to be taken. If the tests show one or several parameters to be high, we may ask that you do further sampling to substantiate the levels.

Page 2
Brent Willoughby
Hecla Mining Company
M/021/004

I spoke with State Health officials last week concerning the tailings pond reclamation. Neither the Bureau of Solid and Hazardous Wastes nor the Bureau of Water Pollution Control have specific regulations pertaining to the reclamation of tailings ponds. However, the Bureau of Water Pollution Control will no doubt be involved in regard to the monitoring data during and after pond reclamation, to ensure that no harmful material will affect surface or groundwater resources in the proximity of the pond..

Sincerely,

A handwritten signature in cursive script, appearing to read "Holland Shepherd".

Holland Shepherd,
Reclamation Soils Specialist

jb
Attachment
cc: Charlie Dietz, BWPC
Lowell Braxton
Wayne Hedberg
MN5/103-104

METAL ANALYSIS

The fees shown are for individual analyses. A sample preparation fee is added for each sample:

Filtration for dissolved metals	8.00
Digestion	
Wastewater	12.00
Soils and sludges	20.00
Oily waste and organics	35.00
Alkaline, for hexavalent chromium	25.00

The method abbreviations used are:

ICAP: Inductively Coupled Argon Plasma spectrometry with detection limit of 0.10 - 0.01 ppm for most samples

FAA: Flame Atomic Absorption, with detection limit of 1.0 - 5.0 ppm for most samples

CRA: Carbon Rod Atomizer, with detection limit of 0.05 - 0.001 ppm

HYD: Hydride Generation, with detection limit of 0.05 - 0.005 ppm

CV: Cold Vapor (for mercury only)

	ICAP	FAA	CRA	HYD	CV
Aluminum	12.00		30.00		
Antimony		20.00	30.00		
1, Arsenic				44.00	
2, Barium	12.00		30.00		
Beryllium		20.00	30.00		
Boron	12.00				
3, Cadmium	12.00		30.00		
Calcium	12.00		30.00		
4, Chromium, Total	12.00		30.00		
Chromium, Hexavalent		12.00	30.00		
Cobalt	12.00		30.00		
5, Copper	12.00		30.00		
Gallium		12.00	30.00		
6, Iron	12.00		30.00		
7, Lead	12.00		30.00		
Lithium		12.00			
Magnesium	12.00		30.00		
8, Manganese	12.00		30.00		
9, Mercury					44.00
10, Molybdenum	12.00		30.00		
11, Nickel	12.00		30.00		
Phosphorus, Total	12.00				
Phosphorus, Ortho	12.00				
Potassium	12.00		30.00		
Selenium	12.00			44.00	
Silicon	12.00		30.00		
12, Silver	12.00		30.00		
Sodium	12.00		30.00		
Strontium		20.00	30.00		
13, Sulfur	12.00				
Thallium		12.00	30.00		
Tin	12.00		30.00		
14, Titanium		20.00	30.00		
Vanadium		20.00	30.00		
15, Zinc	12.00		30.00		

ICAP METALS SCREEN: Aluminum, Barium, Boron, Cadmium, Calcium, Total Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Total Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Sulfur, Tin, and Zinc 98.00